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=> d sta que l69
L66             STR
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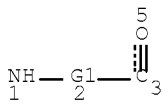


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REP G1=(1-20) CH2
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS UNLIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS   4

STEREO ATTRIBUTES: NONE
L67             SCR 1838
L69      171750 SEA FILE=REGISTRY SSS FUL L66 NOT L67

100.0% PROCESSED  758490 ITERATIONS                      171750 ANSWERS
SEARCH TIME: 00.00.04


=> fil hcaplus
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FILE LAST UPDATED: 21 Dec 2010 (20101221/ED)
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Aug 2010
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Aug 2010

HCAplus now includes complete International Patent Classification (IPC)
reclassification data for the fourth quarter of 2010.

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substance identification.

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L148 ANSWER 1 OF 7 HCAPLUS COPYRIGHT 2010 ACS on STN
AN 2005:696833 HCAPLUS Full-text
DN 143:153707
TI Nanotube-amino acids and methods for their synthesis
IN Margrave, John L.; Khabashesku, Valery N.; Peng, Haiqing
PA William Marsh Rice University, USA
SO PCT Int. Appl., 23 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2005070828	A1	20050804	WO 2005-US1310	20050118
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	CA 2553618	A1	20050804	CA 2005-2553618	20050118
	EP 1730076	A1	20061213	EP 2005-726263	20050118
	R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR				
	JP 2007518802	T	20070712	JP 2006-551173	20050118
	US 20100047575	A1	20100225	US 2006-585591	20090615
PRAI	US 2004-537982P	P	20040121		

WO 2005-US1310 W 20050118
ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT
AB The invention is directed toward compns. comprising carbon nanotubes (CNTs) that are sidewall-functionalized with amino acid groups and to amino acid compns. comprising carbon nanotubes. Single- walled carbon nanotubes (SWNTs) SWNT -[NH(CH2)nCO2H]m (n = 1.apprx.20, m = 1.apprx.10,000) are claimed. The invention describes simple and relatively inexpensive methods for the preparation of such compns. which are expected to greatly extend the bio-medical applications of CNTs. An example uses peroxide-based functionalization of SWNTs to attach carboxyethyl groups to the tube sidewalls.
IPCI C01B0031-02 [ICM,7]; C01B0031-00 [ICM,7,C*]
IPCR C01B0031-00 [I,C*]; C01B0031-02 [I,A]
CC 34-2 (Amino Acids, Peptides, and Proteins)
Section cross-reference(s): 63
IT Nanotubes
(carbon; preparation of nanotube-amino acids)
IT Amino acids, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(nanotubes containing; preparation of nanotube-amino acids)
OSC.G 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD (4 CITINGS)
RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L148 ANSWER 2 OF 7 HCAPLUS COPYRIGHT 2010 ACS on STN
AN 2004:965175 HCAPLUS Full-text
DN 141:367919
TI Manufacture of single-wall carbon nanotubes using supported catalysts
IN Yang, Yuemei; Grosboll, Martin P.; Smith, Kenneth A.
PA Carbon Nanotechnologies, Inc., USA
SO PCT Int. Appl., 66 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004096704	A2	20041111	WO 2003-US24012	20030731
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW				
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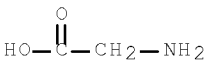
	US 20050074392	A1	20050407	US 2003-630054	20030730
	US 7250148	B2	20070731		
	AU 2003303947	A1	20041123	AU 2003-303947	20030731
	EP 1575872	A2	20050921	EP 2003-816110	20030731
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
	JP 2006511437	T	20060406	JP 2004-571430	20030731
PRAI	US 2002-400208P	P	20020731		
	WO 2003-US24012	W	20030731		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT
AB The production of single-wall carbon nanotubes involves preparing a catalyst

consisting of iron and molybdenum, and a magnesia support material by combustion of suitable precursors in the presence of a foaming agent, especially citric acid, and contacting the catalyst with a gaseous carbon-containing feedstock, especially methane, at 800-950° and for 10 s to 10 min. Suitable catalyst precursors are iron (III) nitrate, ammonium heptamolybdate, and magnesium nitrate. The weight ratio of iron and molybdenum is (2-10):1 and the metal loading is ≤ 10% of the MgO. The catalyst can be sulfided using thiophene. The process can be conducted in batch, continuous or semi-continuous modes, in reactors, such as a transport reactor, fluidized bed reactor, or moving bed reactors. The process also includes making single-wall carbon nanotubes with catalysts containing at least one Group VIB or Group VIIIB metal, especially Co and Mo, on supports such as magnesia, zirconia, silica, and alumina, where the catalyst is sulfided. Catalyst is removed from the carbon product using an acid, especially HCl.

IPCI C01B0031-00 [ICM,7]
IPCR C01B0031-00 [I,C*]; C01B0031-02 [I,A]
CC 49-1 (Industrial Inorganic Chemicals)
Section cross-reference(s): 67
IT Nanotubes
(carbon, single-wall; manufacture of single-wall carbon nanotubes using supported catalysts)
IT 7440-44-0P, Carbon, preparation
RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PREP (Preparation); PROC (Process)
(nanotubes; manufacture of single-wall carbon nanotubes using supported catalysts)
IT 56-40-6, Glycine, processes
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(foaming agent; manufacture of single-wall carbon nanotubes using supported catalysts)
RN 56-40-6 HCAPLUS
CN Glycine (CA INDEX NAME)



OSC.G 9 THERE ARE 9 CAPLUS RECORDS THAT CITE THIS RECORD (12 CITINGS)
RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L148 ANSWER 3 OF 7 HCAPLUS COPYRIGHT 2010 ACS on STN
AN 2004:878334 HCAPLUS Full-text
DN 141:365141
TI Functionalized carbon nanotubes comprising immunogenic epitopes for treating cancer, autoimmune disease or infection, and for preparing electrochemical biosensor
IN Bianco, Alberto; Pantarotto, Davide; Prato, Maurizio
PA Centre National de la Recherche Scientifique, Fr.; Universita Degli Studi di Trieste
SO PCT Int. Appl., 72 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 2
PATENT NO. KIND DATE APPLICATION NO. DATE

PI	WO 2004089818	A1	20041021	WO 2003-EP3838	20030414
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
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	AU 2003224070	A1	20041101	AU 2003-224070	20030414
	WO 2004089819	A1	20041021	WO 2004-EP3829	20040409
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	EP 1613554	A1	20060111	EP 2004-726715	20040409
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR				
	US 20060199770	A1	20060907	US 2005-553439	20051014
	US 20080008760	A1	20080110	US 2005-249328	20051014
PRAI	WO 2003-EP3838	A	20030414		
	WO 2004-EP3829	W	20040409		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB The present invention relates to functionalized carbon nanotubes, a process for preparing the same and their use, in particular in medicinal chemical and more particularly in immunol. Disclosed are carbon nanotube-conjugated fluorophore (e.g. FITC), amino acid, peptide (e.g. immunogen, T cell epitope, B cell epitope, helper T cell epitope or cytotoxic T cell epitope), pseudopeptide, protein, enzyme, antibody, nucleic acid, carbohydrate or drug. These single- or multi-walled carbon nanotube conjugates are useful for treating disease such as cancer, autoimmune disease or infection. These nanotube conjugates are also useful for spectroscopic detection as well as electrochem. biosensor.

IPCI C01B0031-02 [ICM,7]; C01B0031-00 [ICM,7,C*]; A61K0047-48 [ICS,7]; G01N0033-551 [ICS,7]; G01N0033-543 [ICS,7]

IPCR A61K0047-48 [I,C*]; A61K0047-48 [I,A]; A61P0031-00 [I,C*]; A61P0031-00 [I,A]; A61P0037-00 [I,C*]; A61P0037-00 [I,A]; A61P0043-00 [I,C*]; A61P0043-00 [I,A]; C01B0031-00 [I,C*]; C01B0031-02 [I,A]; G01N0033-543 [I,C*]; G01N0033-543 [I,A]; G01N0033-551 [I,C*]; G01N0033-551 [I,A]

CC 15-2 (Immunochemistry)
Section cross-reference(s): 3, 7, 9, 63

IT Nanotubes
(carbon, conjugates; functionalized carbon nanotubes conjugated with immunogenic epitopes for treating cancer, autoimmune disease or infection, and for preparing electrochem. biosensor)

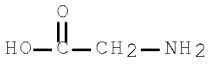
IT Amino acids, biological studies
Peptides, biological studies
Proteins
RL: ARU (Analytical role, unclassified); BSU (Biological study, unclassified); DGN (Diagnostic use); THU (Therapeutic use); ANST

(Analytical study); BIOL (Biological study); USES (Uses)
(conjugates, with carbon nanotube; functionalized carbon nanotubes conjugated with immunogenic epitopes for treating cancer, autoimmune disease or infection, and for preparing electrochem. biosensor)

IT Peptides, biological studies
RL: ARU (Analytical role, unclassified); BSU (Biological study, unclassified); DGN (Diagnostic use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(pseudopeptides, carbon nanotube conjugates; functionalized carbon nanotubes conjugated with immunogenic epitopes for treating cancer, autoimmune disease or infection, and for preparing electrochem. biosensor)

IT 56-40-6D, Glycine, carbon nanotube conjugates
RL: ARU (Analytical role, unclassified); BSU (Biological study, unclassified); BUU (Biological use, unclassified); DEV (Device component use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(functionalized carbon nanotubes conjugated with immunogenic epitopes for treating cancer, autoimmune disease or infection, and for preparing electrochem. biosensor)

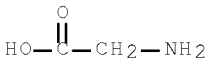
RN 56-40-6 HCAPLUS
CN Glycine (CA INDEX NAME)



OSC.G 7 THERE ARE 7 CAPLUS RECORDS THAT CITE THIS RECORD (8 CITINGS)
RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L148 ANSWER 4 OF 7 HCAPLUS COPYRIGHT 2010 ACS on STN
AN 2004:766332 HCAPLUS Full-text
DN 143:32803
TI Molecular simulation study of adsorption and properties of glycine in carbon nanotubes
AU Guo, Yubao; Yang, Ru; Cao, Weiliang; Zhang, Jingchang
CS The Key Laboratory of Science and Technology of Controllable Chemical Reactions, BUCT, Ministry of Education, Beijing, 100029, Peop. Rep. China
SO Huaxue Wuli Xuebao (2004), 17(4), 437-442
CODEN: HWXUE4; ISSN: 1003-7713
PB Kexue Chubanshe
DT Journal
LA Chinese
AB Mol. Mechanics and Mol. dynamics were performed to study the adsorption and the diffusion, and optimize the configuration and the energy of glycine mols. in carbon nanotubes. The results of the simulation indicate that the configuration of glycine was changed, and those varieties will bring on the changes of the biol. properties via mol. biol. Carbon nanotube shows relatively strong sorption for glycine mols., and carbon nanotubes and glycine mols. will produce relatively strong interaction of π-π electrons. The motions between glycine mols. and carbon nanotubes will keep very synergistic status to make the system remaining in the state of optimal energy among the simulation.
CC 66-3 (Surface Chemistry and Colloids)
IT Nanotubes
(carbon; mol. simulation of adsorption and properties of glycine in carbon nanotubes)

IT Adsorption
Molecular dynamics
Simulation and Modeling
(mol. simulation of adsorption and properties of glycine in carbon nanotubes)
IT 56-40-6, Glycine, properties 7440-44-0, Carbon, properties
RL: PRP (Properties)
(mol. simulation of adsorption and properties of glycine in carbon nanotubes)
IT 56-40-6, Glycine, properties
RL: PRP (Properties)
(mol. simulation of adsorption and properties of glycine in carbon nanotubes)
RN 56-40-6 HCAPLUS
CN Glycine (CA INDEX NAME)



L148 ANSWER 5 OF 7 HCAPLUS COPYRIGHT 2010 ACS on STN
AN 2002:640922 HCAPLUS Full-text
DN 137:310591
TI Helical Rosette Nanotubes with Tunable Chiroptical Properties
AU Fenniri, Hicham; Deng, Bo-Liang; Ribbe, Alexander E.
CS 1393 H. C. Brown Chemistry Laboratory, Purdue University, West Lafayette, IN, 47907-1393, USA
SO Journal of the American Chemical Society (2002), 124(37), 11064-11072
CODEN: JACSAT; ISSN: 0002-7863
PB American Chemical Society
DT Journal
LA English
AB On the basis of transmission electron microscopy (TEM), dynamic light scattering (DLS), small-angle X-ray scattering (SAXS), and CD studies, compound 1 was shown to exist mainly in two states:. (a) At high concentration (≥1 mM, in methanol), 1 undergoes hierarchical self-assembly to generate rosette nanotubes with .apprx.4 nm diameter and a concentration-dependent hydrodynamic radius in the range 10-100 nm. Under these conditions, addition of a chiral amino acid promoter (L-Ala), that binds to the crown ether moiety of 1 via electrostatic interactions, promotes a rapid transition (k0 ≈ 0.48 s-1, for [1] = 0.046 mM, [L-Ala] = 2.8 mM) from racemic to chiral rosette nanotubes with predefined helicities as indicated by the resulting induced CD (ICD). (b) At low concentration (≤0.04 mM, in methanol), 1 exists mainly in a nonassembled state as shown by TEM and DLS. Addition of L-Ala in this case triggers a relatively slow (k0 ≈ 0.07 s-1 for [1] = 0.04 mM, [L-Ala] = 2.4 mM) sequence of supramol. reactions leading to the hierarchical self-assembly of rosette nanotubes with predefined helicities. Under both conditions a and b, the kinetic data unveiled the intrinsic ability of the rosette nanotubes to promote their own formation (autocatalysis). The degree of chiral induction was found to depend dramatically upon the chemical structure of the promoter. This process appears also to follow an all-or-none response, as the vast majority of the crown ether sites must be occupied with a promoter for a complete transition to chiral nanotubes to take place. Finally, both supramol. pathways a and b offer an efficient approach for the preparation of helical rosette nanotubes with tunable chiroptical properties

and may also be viewed as a process by which a predefined set of phys. and chemical properties that characterizes a mol. promoter is expressed at the macromol. level.

CC 22-12 (Physical Organic Chemistry)
Section cross-reference(s): 34

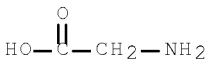
IT Nanotubes
(helical; TEM and CD study on supramol. processes for self-assembly of helical rosette nanotubes with chiroptical properties)

IT Amino acids, reactions
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(promoter; TEM and CD study on supramol. processes for self-assembly of helical rosette nanotubes with chiroptical properties)

IT Reaction mechanism
(self-assembly; TEM and CD study on supramol. processes for self-assembly of helical rosette nanotubes with chiroptical properties)

IT 56-40-6, Glycine, reactions
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(promoter; TEM and CD study on supramol. processes for self-assembly of helical rosette nanotubes with chiroptical properties)

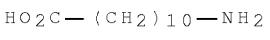
RN 56-40-6 HCAPLUS
CN Glycine (CA INDEX NAME)



OSC.G 132 THERE ARE 132 CAPLUS RECORDS THAT CITE THIS RECORD (136 CITINGS)
RE.CNT 92 THERE ARE 92 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L148 ANSWER 6 OF 7 HCAPLUS COPYRIGHT 2010 ACS on STN
AN 2002:31980 HCAPLUS Full-text
DN 136:255120
TI Synthesis and Characterization of Carbon Nanotube-Nanocrystal Heterostructures
AU Banerjee, Sarbajit; Wong, Stanislaus S.
CS Department of Chemistry, SUNY at Stony Brook, Stony Brook, NY, 11794, USA
SO Nano Letters (2002), 2(3), 195-200
CODEN: NALEFD; ISSN: 1530-6984
PB American Chemical Society
DT Journal
LA English
AB Oxidized single-walled C nanotubes (SWNTs) were reacted with Cd selenide (CdSe) nanocrystals, capped with mercaptothiol derivs., as well as with TiO2 nanocrystals, and functionalized with 11-aminoundecanoic acid to form nanoscale heterostructures, characterized by TEM and IR spectroscopy. The reaction with acid-terminated CdSe nanocrystals and acid-terminated tubes was facilitated with the aid of intermediary linking agents, such as ethylenediamine and semicarbazide, in an amide-forming reaction in the presence of 1-ethyl-3-(3-dimethylaminopropyl)carbodiimide hydrochloride, EDC. Based on electronic absorption spectroscopy, charge transfer probably proceeds from the nanocrystal to the nanotube in the CdSe-nanotube system, whereas in the TiO2-nanotube system, charge transfer is expected to occur from the nanotube to the nanocrystal.
CC 76-3 (Electric Phenomena)

IT Nanotubes
(carbon; synthesis and characterization of carbon nanotube-nanocrystal heterostructures with cadmium selenide)
IT 2432-99-7, 11-Aminoundecanoic acid
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(synthesis and characterization of carbon nanotube-nanocrystal heterostructures with cadmium selenide)
RN 2432-99-7 HCAPLUS
CN Undecanoic acid, 11-amino- (CA INDEX NAME)

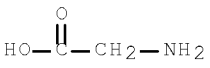


OSC.G 224 THERE ARE 224 CAPLUS RECORDS THAT CITE THIS RECORD (227 CITINGS)
RE.CNT 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L148 ANSWER 7 OF 7 HCAPLUS COPYRIGHT 2010 ACS on STN
AN 2001:90975 HCAPLUS Full-text
DN 134:168561
TI Description of the solvent effects for large molecules: a linear scaling procedure
AU Pomelli, C. S.; Tomasi, J.
CS Dipartimento di Chimica e Chimica Industriale, Universita Degli Studi di Pisa, Pisa, I-56100, Italy
SO Journal of Molecular Structure: THEOCHEM (2001), 537, 97-105
CODEN: THEODJ; ISSN: 0166-1280
PB Elsevier Science B.V.
DT Journal
LA English
AB An anal. of the math. properties of the polarizable continuum model equations leads to a linear scaling implementation of it. The method introduced allows exploring the properties of very large mol. systems in condensed phase at a reasonable computational cost.
CC 65-5 (General Physical Chemistry)
Section cross-reference(s): 68
IT Nanotubes
(BCN nanotubes; linear scaling for solvent effects for large mols.)
IT 25718-94-9
RL: PRP (Properties)
(linear scaling for solvent effects for large mols.)
RN 25718-94-9 HCAPLUS
CN Glycine, homopolymer (CA INDEX NAME)

CM 1

CRN 56-40-6
CMF C2 H5 N O2



OSC.G 9 THERE ARE 9 CAPLUS RECORDS THAT CITE THIS RECORD (10 CITINGS)

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RE.CNT  30    THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD
              ALL CITATIONS AVAILABLE IN THE RE FORMAT


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    No update date (UP) has been created for the reclassified
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>>> For changes in DWPI see HELP CHANGE - last updated April 6, 2010 <<<
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L13  ANSWER 1 OF 10  WPIX COPYRIGHT 2010       THOMSON REUTERS on STN
AN   2005-618248 [200563]   WPIX  Full-text
TI   Nanotube-amino acid composition useful in biomaterials comprises
     carbon nanotubes that are sidewall-functionalized with amino acid group
DC   B05; E36
IN   KHABASHESKU V N; MARGRAVE J L; MARGRAVE M L L; PENG H; MARGRAVE M L
PA   (KHAB-I) KHABASHESKU V N; (MARG-I) MARGRAVE J L; (MARG-I) MARGRAVE M L;
     (PENG-I) PENG H; (UYRW-C) UNIV RICE WILLIAM MARSH
CYC  107
PIA  WO 2005070828   A1 20050804 (200563)* EN  23[3]
     EP 1730076      A1 20061213 (200701)  EN
     JP 2007518802   T  20070712 (200746)  JA  16
     US 20100047575  A1 20100225 (201016)  EN
ADT  WO 2005070828 A1 WO 2005-US1310 20050118; EP 1730076 A1 EP 2005-726263
     20050118; EP 1730076 A1 WO 2005-US1310 20050118; JP 2007518802 T WO
     2005-US1310 20050118; JP 2007518802 T JP 2006-551173 20050118; US
     20100047575 A1 Provisional US 2004-537982P 20040121; US
     20100047575 A1 PCT Application WO 2005-US1310 20050118; US 20100047575 A1
     US 2009-585591 20090615
FDT  EP 1730076 A1 Based on WO 2005070828 A; JP 2007518802 T Based on WO
     2005070828 A
PRAI US 2004-537982P      20040121
     US 2009-585591       20090615
AB    WO 2005070828 A1   UPAB: 20100309
      NOVELTY - A nanotube-amino acid composition comprises carbon nanotubes that
      are sidewall-functionalized with amino acid group.
      DETAILED DESCRIPTION - A nanotube-amino acid composition of formula SWNT-(-NH-
      (CH2-)n-COOH)m (I) or SWNT-(-(CH2-)n-CH(NH2)-COOH)m (II).
      SWNT=single-walled carbon nanotubes; n=1 - 20;
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m=1 - 10000.
INDEPENDENT CLAIMS are included for the following: (1) preparation (p1) of the nanotube-amino acid composition of formula (I) involving (a1) reacting several of fluorinated SWNTs with an ester of an amino acid to form aminoester-functionalized SWNT, and (b1) hydrolyzing the amino ester-functionalized SWNT; and (2) preparation (p2) of the nanotube-amino acid composition of formula (II) (in which n is 1) involving (a2) reacting SWNTs with a peroxide species of formula HO-C(O)-CH2CH2-C(O)-O-O-C(O)-CH2CH2-C(O)-OH (Ia) to yield carboxylic acid functionalized SWNT species of formula SWNT-(CH2CH2-C(O)-OH)m (Ib); (b2) reacting (Ib) with Br2 to yield brominated SWNT species of formula SWNT-(CH2CH(Br)-C(O)-OH)m (Ic); and (c2) reacting (Ic) with NH3. ACTIVITY - None given.
MECHANISM OF ACTION - None given.
USE - In biomaterials e.g. biosensors, vehicles for drug delivery, nanotube-reinforced biopolymers and ceramics for tissue engineering and implants in orthopedics and dentistry.
ADVANTAGE - The water solubility of the composition exceed that of unfunctionalized SWNTs. The composition can be prepared by simple, efficient and relatively inexpesive method with a limited number of steps; and show improved solubility in water, ethanol, isopropanol, chloroform and other polar solvents, which is important for compatability with biosystems, polypeptide syntheses and drug delivery.

TECH
BIOTECHNOLOGY - Preferred Composition: The length of the composition is 5 nm - 5 microns.
ORGANIC CHEMISTRY - Preferred Method: In (a1), the fluorinated SWNTs comprise a stoichiometry CFn (where n is 0.01 - 0.5). The step (a1) additionally involves use of a pyridine catalyst; and has a reaction temperature of 25 - 150degreesC. The step (b1) involves use of an alkali carbonate. In (p2), the SWNTs have lengths of 5 nM - 5 microns, and diameter of 0.5 - 3 nm. The step (a2) is carried out in the presence of a solvent medium selected from ortho-dichlorobenzene, xylene, toluene, mesitylene, benzene and/or chlorobenzene; and heat. The step (b2) involves use of a catalyst selected from elemental phosphorous and/or PBr3. The step (b2) is carried out in presence of carbon tetrachloride (CCl4).

L13 ANSWER 2 OF 10 WPIX COPYRIGHT 2010 THOMSON REUTERS on STN
AN 2005-555471 [200556] WPIX Full-text
TI New fullerene-based amino acid for producing amino acid residue or synthetic polymer e.g. peptide chains, polypeptides and/or proteins, contains fullerene species that is hydrolysis-resistant under typical biological conditions
DC B05; E16
IN BARRON A R; YANG J; BARRON A
PA (UYRW-C) UNIV RICE WILLIAM MARSH
CYC 107
PIA WO 2005070827 A2 20050804 (200556)* EN 31[13]
EP 1713723 A2 20061025 (200670) EN
US 20090197315 A1 20090806 (200952) EN
ADT WO 2005070827 A2 WO 2005-US1187 20050114; EP 1713723 A2 EP 2005-711449 20050114; EP 1713723 A2 WO 2005-US1187 20050114; US 20090197315 A1 Provisional US 2004-536544P 20040114; US 20090197315 A1 PCT Application WO 2005-US1187 20050114; US 20090197315 A1 US 2008-585277 20081202
FDT EP 1713723 A2 Based on WO 2005070827 A
PRAI US 2004-536544P 20040114
US 2008-585277 20081202
AB WO 2005070827 A2 UPAB: 20090817

NOVELTY - New fullerene-based amino acid (I) contains fullerene species that is hydrolysis-resistant under typical biological conditions.
DETAILED DESCRIPTION - Fullerene-based amino acids of formula H2N-CH(R)-C(O)-OH (I) are new.
R=fullerene species that is hydrolysis-resistant under typical biological conditions.
INDEPENDENT CLAIMS are also included for: (1) amino acid residue comprising (I); (2) a synthetic polymer comprising (I); and (3) preparation of (I).
USE - The novel compound is used for producing amino acid residue or synthetic polymer, e.g. peptide chains, polypeptides and/or proteins (claimed). It is useful in pharmaceutical application, and in diagnostic and therapeutic medical applications. It can be used for further exploration in cancer therapy, and peptide and protein engineering.
ADVANTAGE - The novel compound can survive the entire biological range of pH changes and enzymatic cleavage.

TECH
ORGANIC CHEMISTRY - Preparation: The novel amino acid is prepared by reacting buckyketone with N-acetyl-4-aminoPhe-OMe, N-acetylLys-OMe and/or N-R-4-aminoPhe to yield imine intermediate; and hydrogenating the imine intermediate with BH3-THF to yield at least one product of formula 4, 9 and/or 12.
Preferred Compounds: The amino acid is a buckyamino acid or fullerene-based phenylalanine analog. The fullerene species is a fullerene, buckyball, buckyonion and/or buckytube. The amine functionality and/or the carboxylic acid functionality are protected. The amine functionality is protected with Boc and/or Fmoc. The fullerene species is endohedrally-doped with radioactive species, non-radioactive species, metals, gases, and/or spin one half nuclei. The amino acid residue further comprises at least one naturally occurring amino acid. The fullerene species is structure-determining. The fullerene species provides for reaction 'pockets' within the polymer. The fullerene species serves as a link between at least two amino acids.
Preferred Method: The method further comprises a deprotection step that provides for (I).
POLYMERS - Preferred Compounds: The synthetic polymer is a protein comprising a biological function selected from enzymatic, antibody, oxygen transport, and/or ion transport.

ABEX EXAMPLE - Buckyketone (238 mg), Ac-Phe(4-NH2)OMe (85 mg), and p-benzosulfonic acid were added to a flask equipped with a magnetic stir bar. The starting mixture was pumped dry under vacuum. Then, freshly distilled toluene (150 ml) was charged into the flask under an argon atmosphere. The flask was attached to a Soxhlet extractor filled with oven-dried 4 Angstrom molecular sieve. The reaction mixture was refluxed overnight. After the heating was stopped, the dark, golden-brown solution was filtered by a cannula into a second flask. The resulting buckyimine solution was then hydrogenated. After traditional work up, the solution was concentrated and flash chromatographed on silica gel. The final product was eluted by toluene/MeOH (10:1).

L13 ANSWER 3 OF 10 WPIX COPYRIGHT 2010 THOMSON REUTERS on STN
AN 2005-322646 [200533] WPIX Full-text
CR 2004-775519; 2005-240852; 2006-231850; 2009-M27041; 2009-M27055
TI New substituted fullerenes comprising a fullerene core and at least one functional group useful to e.g. ameliorate an oxidative stress disease such as central nervous system neurodegenerative diseases, stroke and atherosclerosis
DC B05
IN HARTNAGEL U; HIRSCH A; HU Y; HU Y Z; LAM M P; LEBOVITZ R; WILSON S R; ZHU T; UWE H

PA (CSIX-N) C-SIXTY INC; (HUYY-I) HU Y; (LAMM-I) LAM M P; (LEBO-I) LEBOVITZ R; (WILS-I) WILSON S R; (ZHUT-I) ZHU T; (HART-I) HARTNAGEL U; (HIRS-I) HIRSCH A

CYC 107

PIA WO 2005035441 A2 20050421 (200533)* EN 67[10]
US 20050130939 A1 20050616 (200540) EN
US 20050288236 A1 20051229 (200603) EN
US 20060040938 A1 20060223 (200615) EN
US 20060047003 A1 20060302 (200617) EN
EP 1670718 A2 20060621 (200643) EN
US 7163956 B2 20070116 (200707) EN
EP 1787987 A1 20070523 (200735)# EN
JP 2007513870 T 20070531 (200737) JA 46

ADT WO 2005035441 A2 WO 2004-US33296 20041008; US 20050130939 A1 Provisional US 2003-510283P 20031010; US 20050130939 A1 Provisional US2003-510455P 20031010; US 20050130939 A1 Provisional US2003-510598P 20031010; US 20050288236 A1 Provisional US2003-510283P 20031010; US 20050288236 A1 Provisional US2003-510455P 20031010; US 20050288236 A1 Provisional US2003-510598P 20031010; US 20060040938 A1 Provisional US2003-510283P 20031010; US 20060040938 A1 Provisional US2003-510455P 20031010; US 20060040938 A1 Provisional US2003-510598P 20031010; US 7163956 B2 Provisional US 2003-510283P 20031010; US 7163956 B2 Provisional US 2003-510455P 20031010; US 7163956 B2 Provisional US 2003-510598P 20031010; US 20050130939 A1 Provisional US 2004-606779P 20040902; US 20050288236 A1 Provisional US 2004-606779P 20040902; US 20060040938 A1 Provisional US 2004-606779P 20040902; US 20060047003 A1 Provisional US 2004-606779P 20040902; US 7163956 B2 Provisional US 2004-606779P 20040902; US 20050130939 A1 US 2004-960449 20041007; US 20050288236 A1 CIP of US 2004-960449 20041007; US 20060040938 A1 CIP of US 2004-960449 20041007; US 7163956 B2 US 2004-960449 20041007; EP 1670718 A2 EP 2004-794598 20041008; EP 1670718 A2 WO 2004-US33296 20041008; US 20050288236 A1 CIP of US 2005-120168 20050502; US 20050288236 A1 US 2005-158915 20050622; US 20060047003 A1 US 2005-214469 20050829; US 20060040938 A1 US 2005-256359 20051021; EP 1787987 A1 EP 2006-255396 20061020; JP 2007513870 T WO 2004-US33296 20041008; JP 2007513870 T JP 2006-534397 20041008

FDT EP 1670718 A2 Based on WO 2005035441 A; JP 2007513870 T Based on WO 2005035441 A

PRAI US 2004-606779P 20040902
US 2003-510598P 20031010
US 2003-510455P 20031010
US 2003-510283P 20031010
US 2004-960449 20041007
US 2005-120168 20050502
US 2005-158915 20050622
US 2005-214469 20050829
US 2005-256359 20051021
EP 2006-255396 20061020

AB WO 2005035441 A2 UPAB: 20090817
NOVELTY - Substituted fullerenes (A) comprising a fullerene core and at least one functional group, are new.
DETAILED DESCRIPTION - Substituted fullerenes comprising a fullerene (A) core (Cn) and at least any one groups m(CX1X2), p-X3, q-X4 or r dendrons (having at least one protic group which imparts water solubility) and s nondendrons (having at least one drug, amino acid, peptide, nucleotide, vitamin or organic moiety) bonded to the fullerene core are new.
n = an even integer greater than or equal to 60; X1, X2 = H, COOH, CONH2, CONH(R-a), CON(R-a)2, COO(R-a), CHO, (CH2)dOH, a peptidyl moiety, R, RCOOH, RCONH2, RCONH(R-a), RCON(R-a)2, RCOO(R-a), RCHO, R(CH2)dOH, a heterocyclic

moiety, a branched moiety comprising one or more terminal OH, NH2, triazole, tetrazole or sugar groups, or a salt;
R = a 1-6C hydrocarbon moiety; R-a = a 1-6C hydrocarbon moiety or an 6-18C aryl-containing moiety (both optionally containing a terminal carboxylic acid or alcohol); X3 = -N+(R2)(R3)(R4), N+(R2)(R3)(R8), C(R2)(R3)(R8), C(R5)(R6)(R7), (CH2)e-COOH, (CH2)e-CONH2, (CH2)e-COOR-a, a peptidyl moiety or an aromatic heterocyclic moiety containing a cationic nitrogen; R2, R3, R4 = H or (CH2)d-CH3; R8 = (CH2)f-SO3-, (CH2)fPO4- or (CH2)fCOO-; R5, R6, R7 = COOH, H, CH(=O), CH2OH or a peptidyl moiety; X4 = tertiary amino moiety of formula (i), (ii), amino moiety of formula (iii)-(v), or an acid or ester moiety of formula (vi)-(viii); R9 = H, OH, O(R-a), NH2, NH(R-a), NH(R-a)2 or (CH2)dOH; d = 0-20;
f = 1-20;
e, q, m, r = 1-6;
p = 1-18; and
s = 0-18.
When m is 3, at least one X1 or X2 is not -COOH; and When r is 1 and the dendron comprises 18-COOH groups, s is an integer 1-18. INDEPENDENT CLAIMS are also included for: (1) a composition (B) comprising (A) and a carrier; and (2) a method of ameliorating damage to tissues for transplantation, ameliorating spoilage of food, inhibiting microbes or reducing free radical levels in tobacco comprising contacting the tissues for transplantation, the food, the microbes or the tobacco with (A). ACTIVITY - CNS-Gen.; Neuroprotective; Antiparkinsonian; Nootropic; Anticonvulsant; Cerebroprotective; Vasotropic; Antiarteriosclerotic; Cardiant; Antidiabetic; Ophthalmological; Nephrotropic; Dermatological; Antiemetic; Cytostatic; Antismoking; Antiangiogenic; Auditory; Antibacterial.
MECHANISM OF ACTION - None given.
USE - (A) are useful to ameliorate an oxidative stress disease such as central nervous system (CNS) neurodegenerative diseases (preferably Parkinson's disease, Alzheimer's disease, multiple sclerosis, amyotrophic lateral sclerosis or Huntington's disease), stroke, atherosclerosis, myocardial ischemia, myocardial reperfusion, diabetes, complications of diabetes, circulatory impairment, retinopathy, blindness, kidney disease, pancreas disease, neuropathy, gum disease, cataracts, skin disease, skin damage, radiation damage, damage caused by tobacco use, excessive angiogenesis, insufficient angiogenesis, hearing loss, collateral damage of chemotherapy, mucositis or senescence; ameliorate damage to tissues for transplantation; ameliorate spoilage of food; inhibit microbes; or reduce free radical level in tobacco (claimed). (A) are useful as antioxidants.
ADVANTAGE - (A) has higher antioxidant properties. The antioxidants properties of (A) were assessed. The results showed that the median inhibitory concentration value of (A) was less than 100 micro M, indicating higher antioxidant properties.

TECH
ORGANIC CHEMISTRY - Preparation: (A) are prepared by methods as reviewed by Murphy et al., U.S. Pat. No. 6,162,926.
Preferred Components: The fullerene core (Cn) has 60-70 carbon atoms. (A) comprises C60 and 3 (CX1X2) groups in the C3 orientation or the D3 orientation; or C60 and 2 (X1X2) groups in the trans-2 orientation, the trans-3 orientation, the e orientation or the cis-2 orientation; or C70 and 2(CX1X2) groups in the bis orientation. (A) comprises an enohedral metal. (A) is e.g. substituted fullerenes of formula (I)-(IV).
PHARMACEUTICALS - Preferred Composition: (A) is a pharmaceutically or comestibly acceptable carrier.

ABEX DEFINITIONS - Preferred Definitions: - n = 60; - m = 3; - p, q, r, s = 0; - X1 = H, peptidyl moiety (-C(=O)O-(CH2)3-C(=O)-alanine, -C(=O)O-(CH2)3-C(=O)-alanine-phenylalanine, -C(=O)O-(CH2)3-C(=O)-alanine-alanine, Z-D-Phe-L-Phe-Gly, Z-L-Phe, Z-Gly-L-Phe-L-Phe, Z-Gly-L-Phe, Z-L-Phe-L-Phe, Z-L-Phe-L-Tyr, Z-L-Phe-Gly,

Z-L-Phe-L-Met, Z-L-Phe-L-Ser or Z-Gly-L-Phe-L-Phe-Gly); - X2 = -COOH; and - Z = a carbobenzoxy group.

ADMINISTRATION - Administration of (A) is 1 micro g/kg/day to 100 g/kg/day (preferably 1-1000) mg/kg/day, orally, intravenously, transdermally, subcutaneously, intraarterially, intramuscularly, intrathecally, intraperitoneally, rectally or nasally.

EXAMPLE - None given.

L13 ANSWER 4 OF 10 WPIX COPYRIGHT 2010 THOMSON REUTERS on STN
AN 2004-480855 [200445] WPIX Full-text
CR 2004-553328; 2006-155560; 2006-231618
TI Tubular of spherical nanostructure for e.g. use in obtaining information from nanoscale environment, is composed of peptides including aromatic or polyaromatic amino acids
DC B04; D16; L03; A96; Q68; U12; U14; V04; V05
IN GAZIT E; RECHES M
PA (UYTA-C) UNIV RAMOT AT TEL AVIV LTD
CYC 106
PIA WO 2004052773 A2 20040624 (200445)* EN 94[19]
AU 2003286404 A1 20040630 (200472) EN
EP 1575867 A2 20050921 (200562) EN
US 20060079455 A1 20060413 (200626) EN
AU 2003286404 A8 20051103 (200634) EN
IN 2005CN01510 A 20070622 (200767) EN
US 7504383 B2 20090317 (200922) EN
US 20090123553 A1 20090514 (200933) EN
US 20100291828 A1 20101118 (201077) EN
ADT WO 2004052773 A2 WO 2003-IL1045 20031209; US 20090123553 A1 Provisional US 2002-431709P 20021209; US 20060079455 A1 Provisional US 2003-438331P 20030107; US 7504383 B2 Provisional US 2003-438331P 20030107; US 20060079455 A1 Provisional US 2003-458378P 20030331; US 7504383 B2 Provisional US 2003-458378P 20030331; US 20090123553 A1 Provisional US 2003-458378P 20030331; AU 2003286404 A1 AU 2003-286404 20031209; AU 2003286404 A8 AU 2003-286404 20031209; EP 1575867 A2 EP 2003-777149 20031209; EP 1575867 A2 PCT Application WO 2003-IL1045 20031209; IN 2005CN01510 A PCT Application WO 2003-IL1045 20031209; US 20090123553 A1 CIP of WO 2003-IL1045 20031209; US 20060079455 A1 Cont of WO 2004-IL12 20040107; US 7504383 B2 CIP of WO 2004-IL12 20040107; US 20090123553 A1 Provisional US 2004-592523P 20040802; US 20090123553 A1 Provisional US 2004-607588P 20040908; US 20090123553 A1 Div Ex US 2005-148262 20050609; US 20060079455 A1 US 2005-148266 20050609; US 7504383 B2 US 2005-148266 20050609; IN 2005CN01510 A IN 2005-CN1510 20050705; US 20090123553 A1 US 2009-318619 20090102; US 20100291828 A1 Provisional US 2004-607588P 20040908; US 20100291828 A1 Div Ex WO 2005-IL954 20050908; US 20100291828 A1 Div Ex US 2007-662136 20070308; US 20100291828 A1 US 2010-843097 20100726
FDT US 20090123553 A1 Div Ex US 7491699 B; AU 2003286404 A1 Based on WO 2004052773 A; EP 1575867 A2 Based on WO 2004052773 A; AU 2003286404 A8 Based on WO 2004052773 A; US 20100291828 A1 Div Ex US 7786086 B
PRAI US 2003-458378P 20030331
US 2002-431709P 20021209
US 2002-431709P 20021209
US 2003-438331P 20030107
US 2003-438331P 20030107
US 2003-458378P 20030331
WO 2003-IL1045 20031209
WO 2004-IL12 20040107

US 2004-592523P 20040802
US 2004-607588P 20040908
US 2004-607588P 20040908
US 2005-148262 20050609
US 2005-148266 20050609
WO 2005-IL954 20050908
US 2007-662136 20070308
US 2009-318619 20090102
US 2010-843097 20100726

AB WO 2004052773 A2 UPAB: 20060121

NOVELTY - A tubular of spherical nanostructure is composed of peptides including not more than 4 aromatic or polyaromatic amino acids, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for: (a) a method of generating a tubular or spherical nanostructure, comprising incubating peptide molecules under conditions which favor formation of the tubular or spherical nanostructure, where each of the peptide molecules includes not more than 4 amino acids; (b) a field emitter device, comprising an electrode and the inventive nanostructure;

(c) a device (10) for obtaining information from a nanoscale environment (14), comprising the inventive nanostructure (12), and detection system (16) capable of interfacing with the nanostructure and receiving the signals thus obtaining information from the nanoscale environment;

(d) an apparatus for electron emission lithography, comprising an electron emission source including the inventive nanostructure, and an electrically conducting mounting device; (e) a memory cell comprising an electrode, and the inventive nanostructure;

(f) a mechanical transmission device, comprising a first nanostructure and a second nanostructure; (g) an electronic inverter having a first switching device and a second switching device, each switching device comprising source electrode, drain electrode, gate electrode and channel, such that the drain electrode of the first switching device is electrically communicating with the source electrode of the second switching device, where the gate electrode and/or the channel comprises a nanostructure; (h) a composition, comprising a matrix and the inventive nanostructure;

(i) a heat transfer device, comprising a nanofluid and a channel for holding the nanofluid, where the nanofluid comprising nanostructures suspended in a fluid;

(j) a method of emitting electrons, comprising forming an electric field near a nanostructure being composed of a plurality of peptides, such that electrons are emitted from it; and (k) a method of obtaining information from a nanoscale environment, the method comprising collecting signals from the nanoscale environment using a nanostructure, and receiving the signals from the nanostructure, thus obtaining information from the nanoscale environment.

USE - The nanostructure is used in field emitter device, a device for obtaining information from a nanoscale environment, an apparatus for electron emission lithography, a memory cell, a mechanical transmission device, an electronic inverter, and a matrix-containing composition. It is used in emitting electrons, in obtaining information from a nanoscale environment, in recording binary information, in transmitting mechanical motion, grabbing and/or in manipulating nanoscale objects, and transferring heat (claimed).

ADVANTAGE - The nanostructure is highly robust under extreme pH and temperatures. It enhances electromagnetic fields near ultra small metal objects. The use of nanostructure as gates in electronic device allows operation at low gate voltage and enables the switching of several individual devices on the same substrates. DESCRIPTION OF DRAWINGS - The drawing shows a device for obtaining information from nanoscale environment. Device (10)
Nanostructure (12)
Nanoscale environment (14)
Detection system (16)
Supporting element (18)

TECH

INSTRUMENTATION AND TESTING - Preferred Components: The nanostructure is coated by a conductive material. The information signals are mechanical signals, optical signals, electrical signals, magnetic signals, or chemical signals.

Preferred Devices: The field emitter device further comprises a substrate having a fluorescent powder coating that is capable of emitting light upon activation by the electrons. The information obtaining-device further comprises a supporting element (18) onto which the nanostructure being mounted, where the supporting element is operable to physically scan the nanoscale environment. The detection system converts the physical motion of the nanostructure to electric signals. The heat transfer device further comprises a locomotion system.

Preferred Apparatus: The electron emission lithography apparatus further comprises a magnetic field generator for generating a magnetic field, to direct the electrons to a predetermined location on the sample. The source electrode and the drain electrode are formed on a substrate. The substrate comprises a thermal oxide deposited over a silicon substrate. The matrix is metal matrix, ceramic matrix, or polymeric matrix. The channel is microchannel or nanochannel.

Preferred Parameters: The nanostructure is not more than 500 nm in diameter, and at least 1 nm in length. The nanostructure is stable at 4-200 degreesC and in acidic or basic environment.

Preferred Method: The information obtaining method further comprises physically scanning the nanoscale environment using the nanostructure, and converting physical motion of the nanostructure to electric signals.

ORGANIC CHEMISTRY - Preferred Components: The amino acids are naturally occurring amino acids, and/or synthetic amino acids. The amino acids can be D-amino acid or L-amino acid.

POLYMERS - Preferred Components: The polyaromatic peptides are polyphenylalanine peptides, polytriptophane peptides, polytyrosine peptides, or non-natural derivatives. The polyaromatic peptides are at least 30 amino acids in length.

L13 ANSWER 5 OF 10 WPIX COPYRIGHT 2010 THOMSON REUTERS on STN
AN 2004-097375 [200410] WPIX Full-text
CR 2003-585228
DNC C2004-040441 [200410]
TI Preparation of a water-soluble derivatized fullerene useful as therapeutic and diagnostic agents involves covalently attaching several functional groups to the fullerene
DC A96; B04; B05; K08
IN ALFORD J M; BOLSKAR R D
PA (ALFO-I) ALFORD J M; (BOLS-I) BOLSKAR R D; (TDAR-N) TDA RES INC
CYC 1
PIA US 20030220518 A1 20031127 (200410)* EN 25[4]
US 7812190 B2 20101012 (201067) EN
ADT US 20030220518 A1 Provisional US 2001-326353P 20011001; US 20030220518 A1 Provisional US 2002-371380P 20020409; US 20030220518 A1 CIP of US 2002-263375 20021001; US 20030220518 A1 US 2003-410809 20030409; US 7812190 B2 Provisional US 2001-326353P 20011001; US 7812190 B2 Provisional US 2002-371380P 20020409; US 7812190 B2 CIP of US 2002-263375 20021001; US 7812190 B2 US 2003-410809 20030409
PRAI US 2003-410809 20030409
US 2002-263375 20021001
US 2002-371380P 20020409
US 2001-326353P 20011001
AB US 20030220518 A1 UPAB: 20101019

NOVELTY - Preparation of a water-soluble derivatized fullerene involves covalently attaching several functional groups to the fullerene. At least two of the functional groups are charged functional groups.
USE - In therapeutic and diagnostic applications, and in vivo imaging agents (e.g. MRI contrast agent) (claimed).
ADVANTAGE - The water-soluble derivatized fullerene exhibits improved biodistribution.

TECH

ORGANIC CHEMISTRY - Preferred Component: The fullerene is an empty fullerene, endohedral fullerene having 60C, 70C, 74C, 82C, or 84C fullerene cage (preferably Sb, I, Bi, At, He, Ne, Ar, Kr, Xe, Rn, 3He, 31P, 13C, 15N, 11B, or 19F, especially61Cu, 64Cu, 67Cu, 177Lu, 133Xe, 141Ce, 147Nd, 160Tb, 161Tb, 166Ho, 169Er, 170Tm, 175Yb, 223Ra, 225Ra, 225Ac, 227Th, 233Pa, 212Bi, 213Bi, 212Pb, 211At or 222Rn), or a metalloendohedral fullerene containing at least two magnetic or radioactive metal element. The fullerene is empty small band gap fullerene, any metal of class fullerene (60C) (preferably lanthamide metal having f electrons (e.g. Gd, Y, Eu or Ho), actinide metal, transition metal, alkali metal or alkaline earth metal (e.g. Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Tm, Yb, Lu, La, Sc, Y, Ac, Th, Pa, U, Np, Pu, Am, Cu, Zr, Hf, Li, Na, K, Rb, Cs, Be, Mg, Ca, Sr, Ba or Ra), giant fullerene, carbon nanotube, metal-carbon nanoencapsulate (preferably empty small band gap fullerene, any metal of class fullerene), C2n, a giant small-band gap fullerene with C2n (where 2n is greater than 100), 74C, 72C, 80C, group of formula (I), any metal of C2n'(C(COO-A+)2)x, C2n'(C(COO-)2B2+)2)x, C2n'(C(COO-A+)2)y(X)z or C2n'(C(COO-)2B2+)2)y(X)z. At least 1divide6 (preferably 1divide3) of the double bonds on the fullerene carry at least one non-hydrogen functional group, at least 1divide3 of the functional groups on the double bonds are charged groups, and at least /2 of the non-hydrogen functional groups on the fullerene are charged groups. All of the functional groups on the fullerene are charged groups comprising carboxylate ion group and/or ammonium ion group. The non-charged group comprises at least one polar or hydrophilic group, serinol amide or its derivative, polyethylene glycol moiety or polyethylene oxide moiety or their fragments. The charged functional group is carboxylic acid group, carboxylate, alkyl or aryl group (substituted by at least one carboxylic acid group or carboxylate), carboxy-substituted phenyl group, ester or ether group (substituted by carboxylic acid group or carboxylate group), -N(R)2, -N(R)4+, alkyl or aryl group (substituted by at least one -N(R)2 or -N(R)4+), -(C(COO-)n)-, carboxy-substituted by aryl group (e.g. phenyl), carboxylate ion group, at least 5 (preferably at least 10) -(CR1R2)- covalently bonded to its surface, -(SiR1R2)-, halo, OH, alkyl substituted aryl group, heterocyclic, heteroaromatic, ether, polyether, polyethylene glycol moiety or fragment, polyethylene oxide moiety or fragment, thioether, alkyl or aryl (substituted by OH, or OR'), ester, amide, or carbamate. The functional group is bonded to the fullerene employing a cycloaddition or cyclopropanation reaction.
R = H, alkyl, aryl or alkenyl;
n = 1 or 2;
R1 and R2 = optionally substituted aryl group, -COOR3, -O-CO-R3, -CO-NR3R4, -COR3, -CN, -P(O)(OR3)2, SO2R3, or O-CO-NR3R4;
R3 and R4 = H, aryl, alkyl, or alkenyl (all optionally substituted by -CO-, -OCO-, or -N(R5)2);
R5 = H, aryl, alkyl, or alkenyl;
R' = alkyl or aryl;
F = fullerene;
X1 and X2 = charged functional group;
x = number of cyclopropyl group on fullerene (preferably at least 5, especially 4 - 12);
2n = 74 - 100;

A = monocation;
B = dication;
2n' = at least 50 (preferably greater than 60);
y = 4 - 12;
X = polar or hydrophilic group (preferably OH or halo);
z = at least 1 (preferably at least 2).
BIOLOGY - The charged functional group is chemical or biological species that selectively binds or segregates into certain cell or tissue type, steroid or a ligand for a cell surface receptor, antibody or its fragment, peptide, protein or its fragment, a nucleic acid, radiolabel, fluorescent label or phosphorescent label.

L13 ANSWER 6 OF 10 WPIX COPYRIGHT 2010 THOMSON REUTERS on STN
AN 2004-057500 [200406] WPIX Full-text
DNC C2004-023704 [200406]
TI Method for preparing water-soluble salts of amino acid derivatives of fullerene
DC A96; A97; B05; E16
IN BAZYAKINA N L; KARNATSEVICH V L; KUTYREVA V V; LYALINA I K; MAKAROV S G; RASNETSOV L D; RASNETSOVA B E; SHCHUPAK E A; SHVARTSMAN YA YU; SUVOROVA O N
PA (DESK-R) DESKO STOCK CO
CYC 1
PIA RU 2213048 C1 20030927 (200406)* RU 0[0]
ADT RU 2213048 C1 RU 2002-118282 20020708
PRAI RU 2002-118282 20020708
AB RU 2213048 C1 UPAB: 20050527
NOVELTY - Invention relates to the improved method for preparing water-soluble salts of amino acid derivatives of fullerene that can be used in medicine, pharmacology and microbiology.
DETAILED DESCRIPTION - Invention describes method for preparing water-soluble salts of amino acid derivatives of fullerene of the general formula HC60NH(CH2)nCOOM wherein C60 is a fullerene ring; M is alkaline metal; n = 1, 3, 5. Method involves interaction of fullerene with amino acid salt in an organic solvent medium at heating and the following isolation of the end product. Interaction reaction is carried out in the presence of low-molecular polyalkylene oxide with molecular mass 150-400 Da.
USE - Organic chemistry, chemical technology.
ADVANTAGE - Improved preparing method. Invention provides reduced time for process carrying out, reduced cost of end product based on using available and inexpensive raw.

L13 ANSWER 7 OF 10 WPIX COPYRIGHT 2010 THOMSON REUTERS on STN
AN 2003-894623 [200382] WPIX Full-text
DNC C2003-254070 [200382]
TI Method for preparing water-soluble amino acid derivatives of fullerene
DC B05; E16
IN BAZYAKINA N L; KARNATSEVICH V L; KUTYREVA V V; LYALINA I K; MAKAROV S G; RASNETSOV L D; RASNETSOVA B E; SHCHUPAK E A; SHVARTSMAN YA YU; SUVOROVA O N
PA (DESK-R) DESKO STOCK CO
CYC 1
PIA RU 2213049 C1 20030927 (200382)* RU 0[0]
ADT RU 2213049 C1 RU 2002-118286 20020708
PRAI RU 2002-118286 20020708
AB RU 2213049 C1 UPAB: 20050531
NOVELTY - Invention relates to the improved method for preparing water-soluble amino acids derivatives of fullerene that can be used in pharmacology and microbiology.

DETAILED DESCRIPTION - Invention describes method for preparing water-soluble amino acid derivatives of fullerene of the general formula (I): HC60NH(CH2)nCOO-Kt+ wherein C60 is a fullerene ring; Kt+ is hydrogen atom, ammonium or alkaline metal cation; n = 1, 3, 5. Method involves interaction of fullerene with amino acid salt at heating and the following isolation of the end product. Compound of the general formula (II): is used as amino acid salt wherein R is CqH2q+1; m = 3, 4; q = 2-5; :- is chemical element taken among (Va) or (VIa) groups of Mendeleyev's periodic system. Then compound of the general formula (III): is prepared wherein R, :, n, m have values given above that is subjected for the following reactions: in the case for preparing the end product of the general formula (I) wherein Kt+ is hydrogen atom method involves effect with acid solution and if Kt+ is ammonium or alkaline metal cation method involves effect with corresponding salt. Proposed method does not require the special equipment and can be carried out using the conventional chemical equipment that results to the simplified technological process and reduced cost of the end product.
USE - Organic chemistry, chemical technology.
ADVANTAGE - Improved preparing method.

L13 ANSWER 8 OF 10 WPIX COPYRIGHT 2010 THOMSON REUTERS on STN
AN 1999-561642 [199947] WPIX Full-text
DNC C1999-163637 [199947]
TI New fullerene derivatives for condensing DNA - useful in gene therapy.
DC B04; D16
IN ISOBE H; NAKAMURA E; SAWAMURA M
PA (FUJI-C) FUJISAWA PHARM CO LTD; (NAKA-I) NAKAMURA E; (ASTE-C) ASTELLAS PHARMA INC
CYC 21
PIA WO 9946235 A1 19990916 (199947)* JA 37[1]
EP 1069107 A1 20010117 (200105) EN
JP 2000535618 X 20021015 (200282) JA
EP 1420066 A2 20040519 (200433) EN
US 6765098 B1 20040720 (200448) EN
US 20040214218 A1 20041028 (200472) EN
EP 1069107 B1 20050511 (200536) EN
DE 69925264 E 20050616 (200540) DE
DE 69925264 T2 20051006 (200566) DE
US 7018599 B2 20060328 (200623) EN
ADT WO 9946235 A1 WO 1999-JP1146 19990310; DE 69925264 E DE 1999-69925264 19990310; DE 69925264 T2 DE 1999-69925264 19990310; EP 1069107 A1 EP 1999-907890 19990310; EP 1420066 A2 Div Ex EP 1999-907890 19990310; EP 1069107 B1 EP 1999-907890 19990310; DE 69925264 E EP 1999-907890 19990310 ; DE 69925264 T2 EP 1999-907890 19990310; EP 1069107 A1 WO 1999-JP1146 19990310; JP 2000535618 X WO 1999-JP1146 19990310 ; US 6765098 B1 WO 1999-JP1146 19990310; US 20040214218 A1 Div Ex WO 1999-JP1146 19990310; EP 1069107 B1 WO 1999-JP1146 19990310; DE 69925264 E WO 1999-JP1146 19990310; DE 69925264 T2 WO 1999-JP1146 19990310; JP 2000535618 X JP 2000-535618 19990310; US 6765098 B1 US 2000-622915 20001117 ; US 20040214218 A1 Div Ex US 2000-622915 20001117; EP 1420066 A2 EP 2004-2101 19990310; EP 1069107 B1 Related to EP 2004-2101 20040131; US 20040214218 A1 US 2004-846646 20040517; US 7018599 B2 Div Ex US 1999-622915 19990310; US 7018599 B2 Div Ex WO 1999-JP1146 19990310; US 7018599 B2 US 2004-846646 20040517
FDT EP 1420066 A2 Div ex EP 1069107 A; DE 69925264 E Based on EP 1069107 A; DE 69925264 T2 Based on EP 1069107 A; EP 1069107 B1 Related to EP 1420066 A; US 20040214218 A1 Div ex US 6765098 B; EP 1069107 A1 Based on WO 9946235 A; JP 2000535618 X Based on WO 9946235 A; US 6765098 B1 Based on WO

9946235 A; EP 1069107 B1 Based on WO 9946235 A; DE 69925264 E Based on WO 9946235 A; DE 69925264 T2 Based on WO 9946235 A; US 7018599 B2 Div ex US 6765098 B

PRAI JP 1998-58614 19980310

AB WO 1999046235 A1 UPAB: 20060115

NOVELTY - Fullerene derivatives comprising 1-4 nitrogen containing hydrophilic side chains and being capable of condensing DNA are new.

USE - For condensing DNA and with potential use in gene therapy.

TECH

ORGANIC CHEMISTRY - Preferred Fullerenes: Two classes of fullerenes are claimed e.g. a fullerene of formula (I) excluding a compound of formula (I').

R = H or acyl comprising a 2-30C hydrocarbyl chain containing 1-10 N; provided that both R groups are not H.

Preparation: The fullerenes are prepared by modification of known compounds e.g. adding an amino portion to complete a R group.

ABEX EXAMPLE - N,N,N'-Trimethyl-1,3-propane-diamine (14.7 microl) was added to compound equivalent to (I; R = COCH2Br) (23.1 mg) in chlorobenzene (10 ml) and the mixture was stirred for 1 hour. Aqueous extraction and purification chromatography (Jaigel; 0.5% triethylamine/chloroform) gave 12.2 mg (50%) of (I; R = COCH2NMe(CH2)3NMe2)

L13 ANSWER 9 OF 10 WPIX COPYRIGHT 2010 THOMSON REUTERS on STN

AN 1999-304765 [199926] WPIX Full-text

CR 1997-247124; 2000-095752; 2001-657929; 2002-526167; 2004-256366

TI Polyorgano fullerene derivatives

DC A28; A41; E19; E36

IN CHIANG L Y; LONG

PA (CHIA-I) CHIANG L Y

CYC 27

PIA EP 919520 A2 19990602 (199926)* EN 20[0]
US 6020523 A 20000201 (200013) EN
JP 2000044215 A 20000215 (200019)# JA 27
US 6046361 A 20000404 (200024) EN

ADT EP 919520 A2 EP 1998-116060 19980826; US 6020523 A CIP of US 1995-547714 19951026; US 6046361 A CIP of US 1995-547714 19951026; US 6020523 A CIP of US 1997-893055 19970715; US 6046361 A CIP of US 1997-893055 19970715; US 6020523 A Div Ex US 1997-976532 19971120; US 6046361 A US 1997-976532 19971120; JP 2000044215 A JP 1998-214304 19980729; US 6020523 A US 1999-264538 19990308

FDT US 6020523 A CIP of US 5648523 A; US 6046361 A CIP of US 5648523 A

PRAI US 1997-976532 19971120
US 1995-547714 19951026
US 1997-893055 19970715
JP 1998-214304 19980729
US 1999-264538 19990308

AB EP 919520 A2 UPAB: 20100630

NOVELTY - New polyorgano fullerene derivatives, prepared by (i) obtaining a polynitrofullerene or polycyclo-sulfated fullerene intermediate; and (ii) contacting the intermediate with a nucleophilic agent.

DETAILED DESCRIPTION - Compounds of formula (I) and (II) or salts thereof are new.

F = a fullerene core;

E = E1, E2, E3, E4, or E5;

E1 = Y1,Y2-amino, (Y1,Y2-alkyl)-amino, Y1,Y2-ethylenediamino, (dihydroxymethyl)alkylamino, (X1,X3-aryl)amino, or X1,X3-aryloxy; E2 = Y1,Y2alkoxy, (Y1,Y2-amino)alkoxy, (Y1,Y2,Y3-aryl)oxy, (dihydroxyalkyl)aryloxy, (Y1,Y2,Y3-alkyl)amino, (Y1,Y2,Y3-aryl)amino, or dihydroxyalkylamino;

E3 = Y1,Y2,Y3-alkoxy, (trihydroxyalkyl)alkoxy, (trihydroxyalkyl)alkylamino, (dicarboxyalkyl)amino, (Y1,Y2,Y3-alkyl)thio, (X1,X3-aryl)thio, (Y1,Y2-alkyl)thio, (dihydroxyalkyl)thio, Y1,Y2-dioxoalkyl;
E4 = ((glycosidyl)oxoheteroaryl)amino, ((glycosidyl)oxoaryl)amino, (X1,X2,X3-heteroaryl)amino, (X1-diarylketone)amino, (X1-oxoaryl)amino, (X,X1-dioxoaryl)amino, (Y1-alkyl,Y2-alkyldioxoheteroaryl)amino, (Y1-alkyl,Y2-alkyldioxoaryl)amino, (di(Y1,Y2-methyl)dioxoheteroaryl)amino, (di(Y1,Y2-methyl)dioxoaryl)amino, ((glycosidyl)heteroaryl)amino, ((glycosidyl)aryl)amino, ((carboxylacetylalkyl)oxoheteroaryl)amino, ((carboxylacetylalkyl)oxoaryl)amino, ((isopropylaminohydroxyalkoxy)aryl)amino, or (X1,X2,X3-alkylaryl)amino; E5 = (X1,X2,X3-heteroaryl)oxy, (isopropylaminohydroxyalkyl)aryloxy, (X1,X2,X3-oxoheteroaryl)oxy, (X1,X2,X3-oxoaryl)oxy, (X1,Y1-oxoheteroaryl)oxy, (X1-diarylketone)oxy, (X,X1-oxoaryl)oxy, (X1,X2dioxoaryl)oxy, (Y1,Y2di-aminodihydroxy)alkyl, (X1,X2-heteroaryl)thio, ((tricarboxyalkyl)ethylenediamino)alkoxy, (X1,X2-oxoaryl)thio, (X1,X2-dioxoaryl)thio, (glycosidylheteroaryl)thio, (glycosidylaryl)thio, Y1-alkyl(thiocarbonyl)thio, Y1,Y2-alkyl(thiocarbonyl)thio, Y1,Y2,Y3-alkyl(thiocarbonyl)thio, (Y1,Y2-aminothiocarbonyl)thio, (pyranosyl)thio, cysteinyl, tyrosinyl, (phenylalanyl)amino, (dicarboxyalkyl)thio, (aminoaryl),-amino, or (pyranosyl)amino;
X = halide;
X1 and X2 = hydrogen, Y1, -O-Y1, -S-Y1, -NH-Y1, -CO-O-Y1, -O-CO-Y1, CO-NH-Y1, -CO-NY1Y2, -NH-CO-Y1, -SO2-Y1, -CHY1Y2, or -NY1Y2; X3 = -Y1, -O-Y1, -S-Y1, -NH-Y1, CO-O-Y1, -O-CO-Y1, -CO-NH-Y1, - CO-NY1Y2, NH-CO-Y1, -SO2-Y1, -CHY1Y2, or -NY1Y2; Y1, Y2 and Y3 = -BZ;
B = -Ra-O-(Si(CH3)2-O-)1-100, 1-2000C alkyl, 6-40C aryl, 7-60C alkylaryl, 7-60C arylalkyl, (1-30C alkyl ether)1-100, (6-40C aryl ether)1-100, (7-60C alkylaryl ether)1-100, (7-60C arylalkyl ether)1-100, (1-30C alkyl thioether)1-100, (6-40C aryl thioether)1-100, (7-60C alkylaryl thioether)1-100, (7-60C arylalkyl thioether)1-100, (2-50C alkyl ester)1-100, (7-60C aryl ester)1-100, (8-70C alkylaryl ester)1-100, (8-70C arylalkyl ester)1-100, -R-CO-O- (1-30C alkyl ether)1-100, -R-CO-O- (6-40C aryl ether)1-100, -RCO-O- (7-60C alkylaryl ether)1-100, -R-CO-O- (7-60C arylalkyl ether)1-100, (4-50C alkyl urethane)1-100, (14-60C aryl urethane)1-100, (10-80C alkylaryl urethane)1-100, (10-80C arylalkyl urethane)1-100, (5-50C alkyl urea)1-100, (14-60C aryl urea)1-100, (10-80C alkylaryl urea)1-100, (10-80C arylalkyl urea)1-100, (2-50 alkyl amide)1-100, (7-60C aryl amide)1-100, (8-70C alkylaryl amide)1-100, (8-70C arylalkyl amide)1-100, (3-30C alkyl anhydride)1-100, (8-50C aryl anhydride)1-100, (9-60C alkylaryl anhydride)1-100, (9-60C arylalkyl anhydride)1-100, (2-30C alkyl carbonate)1-100, (7-50C aryl carbonate)1-100, (8-60 alkylaryl carbonate)1-100, (8-60C arylalkyl carbonate)1-100, -R1-O-CO-NH-(R2 or Ar-R2-Ar)-NH-CO-O-(1-30C alkyl ether, 6-40C aryl ether, 7-60C alkylaryl ether, or 7-60C arylalkyl ether)1-100, -R1-O-CO-NH-(R2 or Ar-R2-Ar)-NH-CO-O-(2-50C alkyl ester, 7-60C aryl ester, 8-70C alkylaryl ester, or 8-70C arylalkyl ester)1-100, -R1-O-CO-NH-(R2 or Ar-R2-Ar)-NHCO-O-(1-30C alkyl ether, 6-40C aryl ether, 7-60C alkylaryl ether, or 7-60C arylalkyl ether)1-100-CONH-(R2 or Ar-R2-Ar)-NH-CO-O-, -R1-O-CO-NH-(R2 or Ar-R2-Ar)-NH-CO-O-(2-50C alkyl ester, 7-60C aryl ester, 8-70C alkylaryl ester, or 8-70C arylalkyl ester)1-100-R3-O-CO-NH-(R2 or Ar-R2-Ar)-NH-COO-, -R1-NH-CO-NH-(R2 or Ar-R2-Ar)-NH-CO-O(1-30C alkyl ether, 6-40C aryl ether, 7-60C alkylaryl ether, or 7-60C arylalkyl ether)1-100, -R1-NH-CONH-(R2 or Ar-R2-Ar)-NH-CO-O-(2-50C alkyl ester, 7-60C aryl ester, 8-70C alkylaryl ester, or 8-70C arylaIkyl ester)1-100, -R1-NH-CO-NH-(R2 or Ar-R2-Ar)NH-CO-O-(1-30C alkyl ether, 6-40C aryl ether, 7-60C alkylaryl ether, or 7-60C arylalkyl ether)1-100-CONH-(R2 or Ar-R2-Ar)-NH-CO-O-, -R1-NH-CO-NH(R2 or Ar-R2-Ar)-NH-CO-O-(2-50C alkyl ester, 7-60C aryl ester, 8-70C alkylaryl ester, or 8-70C arylalkyl ester)1-100-R3-O-CO-NH-(R2 or Ar-R2-Ar)-NH-COO-, -R1-O-CO-NH-(R2 or Ar-R2-Ar)-NH-CO-NH(2-50C alkyl amide, 7-60C aryl amide, 8-70C alkylaryl amide, or 8-70C arylalkyl amide)1-100, or -R1-NHCO-NH-(R2 or Ar-R2-

Ar)-NH-CO-NH-(2-50C alkyl amide, 7-60C aryl amide, 8-70C alkylaryl amide, or 8-70C arylalkyl amide)1-100; Z = -C-D-;
C = -R-, -R-Ar-, -Ar-R-, or -Ar; D = -OH, -SH, -NH2, NHOH, -SO3H, -OSO3H, -COOH, -CONH2, -CO-NH-NH2, CH(NH2)-COOH, - P(OH)3, -PO(OH)2, -O-PO(OH)2, -O-PO(OH)-O-PO(OH)2, O-PO(O-)-O-CH2CH2NH3-, -glycoside, -OCH3, -O-CH2-(CHOH)4-CH2OH, -OCH2-(CHOH)2-CH2OH, -C6H3(OH)2, -NH3+, -N+H2Rb, -N+HRbRc, or N+HRbRcRd; R, R1, R2, R3, Ra, Rb, Rc and Rd = 1-30C alkyl; Ar = aryl;
n = 2-30; and
m = 1-20.
USE - Fullerene derivatives synthesized from polynitrofullerenes or polycyclosulfated fullerenes can be used to produce fullerene-grafted polymers (see US5635581) and as free-radicals scavengers (see US5648523). Other fullerene derivatives which can be made include, e.g. poly(diethanolamino)fullerenes, poly(hydroxyethoxyethylamino)fullerenes, poly(tris(hydroxymethyl)-methyl-amino)fullerenes, poly(disuccinyloxyethylamino)fullerenes, poly(p-methylphenylamino) fullerenes, poly(N-phenyl-1,4-phenylenedi-amino)fullerenes, poly(phenylamino)fullerenes, poly (N,N'-bis(4'-aminophenyl)-1,4- quinonenediimino) fullerenes, 4-aminobenzylphosphonic acid derivatives, amino acid derivatives of C60, poly(L-tyrosinated)fullerenes, 2-hydroxymethylphenol derivatives, poly(2,3-dihydroxypropylmercapto)fullerenes, mercaptosuccinic acid derivatives, mercaptosuccinic acid derivatives, poly(hexylmercapto)-fullerenes, poly(acetylacetonato)fullerenes, poly(bis(1,1'-hydroxyaminoe-ethyl)methyl)fullerenes, poly(methoxyoligo(ethyleneglycolated))fullerenes and polyhydroxymercaptosuccinic acid derivatives.
ADVANTAGE - Using polynitro- or polycyclosulfated fullerene intermediates allows the reactions to proceed rapidly under mild conditions.

TECH ORGANIC CHEMISTRY - Preferred Method: The method further comprises hydrolyzing the polyorganofullerene derivative to the corresponding polyhydroxyorganofullerene derivative of formula (II).

ABEX DEFINITIONS - Preferred definitions: (I): F = C60, C70, C76, C78, C82, C84 or C92 fullerene core; n = 3-25.
EXAMPLE - (60)fullerene (500 mg) in benzene (50 ml, dried over Na) were deoxygenated prior to use. An HNO3 and NaNO2 mixture was bubbled by a steady flow of N2 through the C60 solution. Within 15 minutes, the purple C60 solution changed to orange-red. The mixture was then stirred (ambient temperature/2 hours) to give a dark brown-red solution with suspended solids. Excess NO2 was removed (N2 bubbling) and destroyed in a trapping solution. Benzene was then evaporated from the product solution (reduced pressure) to give dark brown solids. The solids were worked up and dried (vacuum/40degreesC) to give brown solids of polynitrofullerene derivatives having solubility in common organic solvents. C60(NO2)n (500 mg) and tetrahydrofuran (40 ml) was slowly bubbled with a stream mixed with methanol (60 ml) to precipitate brown solids which were separated, washed (2 x 20ml) and dried (vacuum/40degreesC) to give brown solids of the corresponding polyaminofullerene derivative C60(NH2)m (m - n).

L13 ANSWER 10 OF 10 WPIX COPYRIGHT 2010 THOMSON REUTERS on STN
AN 1995-154990 [199520] WPIX Full-text
DNC C1995-071364 [199520]
DNN N1995-122101 [199520]
TI Compsn. containing linker, chelator opt. containing metal ion, and bio-molecule - used for magnetic resonance imaging, X-ray imaging and radio-pharmaceuticals
DC B05; P31
IN BEATY J A; COOPER S; DUNN T J
PA (MLCW-C) MALLINCKRODT MEDICAL INC
CYC 27

PIA WO 9509564 A1 19950413 (199520)* EN 26[0]
AU 9479600 A 19950501 (199532) EN
EP 722291 A1 19960724 (199634) EN [0]
JP 09503765 T 19970415 (199725) JA 21[0]
ADT WO 9509564 A1 WO 1994-US10999 19940930; AU 9479600 A AU 1994-79600 19940930; EP 722291 A1 EP 1994-930502 19940930; EP 722291 A1 WO 1994-US10999 19940930; JP 09503765 T WO 1994-US10999 19940930; JP 09503765 T JP 1995-510886 19940930
FDT AU 9479600 A Based on WO 9509564 A; EP 722291 A1 Based on WO 9509564 A; JP 09503765 T Based on WO 9509564 A
PRAI US 1993-130342 19931004
AB WO 1995009564 A1 UPAB: 20060109
A cpd. of formula CnLxGy (I) is new: n = 60-1,000; L = a bifunctional linker; x = 0-12; G = chelator; y = 0-12; provided x or y is at least 1. The cpd. may further comprise a metal ion and/or a biomolecule.
USE - (I) are used for improved magnetic resonance imaging, spectroscopy and radiopharmaceuticals. For use in diagnostic and therapeutic radiopharmaceuticals, the complexed metal ion must be radioactive. Admin. for diagnostic compsns. may be enteral or parenteral. Generally, parenteral dosage is 0.001-1.0 (pref. 0.01-0.5) mmol of ion complex/kg.

=> d his

(FILE 'HOME' ENTERED AT 09:21:37 ON 22 DEC 2010)

FILE 'HCAPLUS' ENTERED AT 09:21:56 ON 22 DEC 2010
L1 1 S US20100047575/PN OR (US2006-585591 OR WO2005-US01310 OR US200
E KHABASHESKU/AU
L2 120 S E7-E9
E PENG/AU
L3 1 S E3
E PENG H/AU
L4 171 S E3,E16
E PENG HAI/AU
L5 44 S E3
E PENG HAIQING/AU
L6 43 S E3
E HAI/AU
E HAI Q/AU
E HAIQING/AU
L7 1 S E9
E MARGRAVE/AU
L8 598 S E7-E10
E RICE/CO
L9 13010 S E136-E164/CO,PA,CS
E E140+ALL
L10 14112 S E2+RT OR E2-E7/PA,CS
E WILLIAM MARSH/CO
E WILLIAM MAR/CO
L11 706 S E4-E11/CO,PA,CS
E E6+ALL
L12 1 S L1 AND L2-L11
L13 88169 S NANOTUB? OR NANO TUB?
L14 87920 S NANOTUB?/CW,CT,IT,BI,OBI
E NANOTUBE/CT
L15 72432 S E5-E7
E E5+ALL
L16 72511 S E6+OLD
L17 13093 S B82B/IPC,IC,ICM,ICS,EPC

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L18       11388 S SWNT OR SWCNT
                E E5+ALL
L19       19731 S L13-L17 AND (SINGLE WALL? OR SINGLEWALL?)
L20       11300 S L18 AND L13-L17
L21       20388 S L18,L19,L20
L22         139 S C01B031/IPC,IC,ICM,ICS,EPC AND L18
L23         564 S C01B031/IPC,IC,ICM,ICS,EPC AND (SINGLE WALL? OR SINGLEWALL?)
L24        5249 S C01B031/IPC,IC,ICM,ICS,EPC AND L13-L17
L25       25059 S L21-L24
L26       72911 S L13-L17 NOT L25
L27         564 S L1-L12 AND L25
L28         195 S L1-L12 AND L26
L29         273 S L25-L28 AND AMINO ACID?/CT
L30         355 S L25-L28 AND AMINO ACID?/SC,SX
L31         616 S L25-L28 AND AMINO ACID
L32           8 S L25-L28 AND AMINOACID
L33         351 S L25-L28 AND C07K/IPC,IC,ICM,ICS,EPC
                E AMINO ACIDS/CT
L34        1086 S L25-L28 AND E3+OLD,NT
                E E3+ALL
L35         107 S L25-L28 AND E200+NT
L36          32 S L25-L28 AND GLY
L37         186 S L25-L28 AND GLYCINE
L38         995 S L25-L28 AND PEPTIDE?/CW,CT
L39           0 S L25-L28 AND POLYPEPTIDE?/CW,CT
                E PEPTIDES/CT
                E E3+ALL
L40         846 S L25-L28 AND E3+OLD
L41           1 S L25-L28 AND E101
L42           3 S L25-L28 AND E217
L43        3066 S L27-L42
L44         385 S L43 AND PY<=2004 NOT P/DT
L45         401 S L43 AND (PD<=20040121 OR PRD<=20040121 OR AD<=20040121) NOT L
L46         786 S L44,L45
L47        5437 S L25 AND PY<=2004 NOT P/DT
L48        1906 S L25 AND (PD<=20040121 OR PRD<=20040121 OR AD<=20040121) NOT L
L49        7111 S L47,L48 NOT L46
L50        7111 S L49 OR L49
L51        3500 S L50  RAN=(2003:481604,)
L52        3611 S L50  RAN=(,2003:481600)

     FILE 'REGISTRY' ENTERED AT 09:42:09 ON 22 DEC 2010

     FILE 'HCAPLUS' ENTERED AT 09:42:10 ON 22 DEC 2010
L53             TRA L46 1- RN :     8079 TERMS

     FILE 'REGISTRY' ENTERED AT 09:42:32 ON 22 DEC 2010
L54        8079 SEA L53

     FILE 'HCAPLUS' ENTERED AT 09:42:58 ON 22 DEC 2010
L55             TRA L51 1- RN :     2387 TERMS

     FILE 'REGISTRY' ENTERED AT 09:43:56 ON 22 DEC 2010
L56        2387 SEA L55

     FILE 'HCAPLUS' ENTERED AT 09:44:07 ON 22 DEC 2010
L57             TRA L52 1- RN :     1890 TERMS

     FILE 'REGISTRY' ENTERED AT 09:45:04 ON 22 DEC 2010
L58        1890 SEA L57
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L59       10706 S L54,L56,L58
L60           1 S GLYCINE/CN
L61        1364 S 56-40-6/CRN
L62           2 S L61 AND C2H5NO2 AND 1/NC
                E "(C2H3NO)N"/MF
L63           9 S E3
L64           1 S 25734-27-4
L65           2 S L59 AND L60,L62,L64
L66             STR
L67             SCR 1838
L68          50 S L66 NOT L67
L69      171750 S L66 NOT L67 FUL
L70             STR L66
L71          50 S L70 CSS SAM SUB=L69
L72        1755 S L70 CSS FUL SUB=L69
L73         267 S L72 AND 1/NC
L74         252 S L73 NOT IDS/CI
L75          53 S L74 NOT ((D OR T)/ELS OR 11C# OR 12C# OR 13C# OR 14C# OR C11#
L76           5 S L75 AND C2H5NO2
L77           4 S L76 NOT 1218765-24-2
L78           1 S L76 NOT L77
L79          50 S L75 NOT (L78 OR 13N#)
L80             STR L66
L81        3753 S L69 AND PMS/CI
L82        1868 S L81 AND 1/NC
L83        1840 S L82 NOT IDS/CI
L84        1278 S L83 NOT (C2H4O OR C3H6O OR C4H8O)
L85        1173 S L84 NOT (S OR SI OR P)/ELS
L86             STR L80
L87             STR L86
L88           1 S L87 CSS SAM SUB=L85
L89          32 S L87 CSS FUL SUB=L85
L90             STR L86
L91             STR L90
L92             STR L91
L93             STR L92
L94           0 S L93 CSS SUB=L85 SAM
L95           4 S L93 FUL SUB=L85
L96          21 S L89 NOT ((D OR T)/ELS OR 15N# OR 13C#)
L97             STR L92
L98             STR L97
L99             STR L98
L100         30 S L99 CSS SAM SUB=L69
L101        544 S L99 CSS FUL SUB=L69
L102        356 S L101 AND 1/NC
L103        355 S L102 NOT IDS/CI
L104        291 S L103 NOT ((D OR T)/ELS OR 11C# OR 12C# OR 13C# OR 14C# OR C11
L105          0 S L104 AND L59
L106          0 S L101 AND L59
L107        101 S L69 AND L59
L108         62 S L107 NOT (S OR P OR B OR SI OR CL OR BR OR I OR F)/ELS
L109         54 S L108 NOT L60,L62,L64,L79,L96
                SEL CRN L79

     FILE 'HCAPLUS' ENTERED AT 10:15:07 ON 22 DEC 2010
L110     157711 S L60,L62,L64,L79,L96
L111        595 S L110 AND L13-L26
L112         17 S L111 AND L46
L113         11 S L111 AND L49
L114         28 S L112,L113
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L115          5 S L114 AND L18
L116         28 S L114 AND L13-L17
L117          9 S L114 AND L19
L118          9 S L115,L117
L119         19 S L116 NOT L118
L120         15 S L118,L119 AND (NANOTUB? OR NANO TUB?)
L121         13 S L112-L118 NOT L120
L122          1 S L121 AND 138:94175/DN
L123         16 S L120,L122
L124         12 S L116 NOT L123
L125         36 S L1-L12 AND L110
L126        241 S L1-L12 AND L46
L127        173 S L1-L12 AND L47,L48
L128          0 S L126,L127 AND L110
L129        190 S L126,L127 AND PY<=2004 NOT P/DT
L130         51 S L126,L127 AND (PD<=20040121 OR PRD<=20040121 OR AD<=20040121)
L131        239 S L129,L130 AND NANOTUB?
L132          0 S L129,L130 AND NANO TUB?
L133        162 S L131 AND (SWNT OR SWCNT OR SINGLEWALL? OR SINGLE WALL?)
L134          1 S L133 AND AMINO ACID?/CT,SC,SX
L135        161 S L133 NOT L134
L136         17 S L123,L134
               SEL HIT RN

     FILE 'REGISTRY' ENTERED AT 10:25:15 ON 22 DEC 2010
L137         23 S E20-E42
               SEL RN 2 5 23
L138          3 S E43-E45
L139          2 S L137 AND NYLON

     FILE 'HCAPLUS' ENTERED AT 10:26:56 ON 22 DEC 2010
L140          8 S L138 AND L136
L141          9 S L134,L140
L142      76510 S L60,L62,L64
L143        108 S L142 AND L13-L17
L144         16 S L143 AND L19
L145          1 S L143 AND L118
L146          0 S L144,L145 AND PY<=2004 NOT P/DT
L147          1 S L144,L145 AND (PD<=20040121 OR PRD<=20040121 OR AD<=20040121)
L148          7 S L141,L145,L147

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     FILE 'WPIX' ENTERED AT 11:53:04 ON 22 DEC 2010
L1         6212 S (C07C227 OR C07C0227)/IPC,IC,ICM,ICS,EPC
L2        11338 S (C07C229 OR C07C0229)/IPC,IC,ICM,ICS,EPC
L3        12275 S L1,L2
L4           23 S L3 AND C01B031/IPC,IC,ICM,ICS,EPC
L5           25 S L3 AND C01B0031/IPC,IC,ICM,ICS,EPC
L6            6 S L3 AND (B05-U03 OR C05-U03 OR E05-U03)/MC
L7            0 S L3 AND (B05-U05A OR C05-U05A)/MC
L8            0 S L3 AND E05-U03A/MC
L9            6 S L3 AND B82B/IPC,IC,ICM,ICS,EPC
L10          30 S L4-L9
L11           8 S L3 AND (NANOTUB? OR NANO TUB?)
L12          32 S L10,L11
L13          10 S L12 AND (PD<=20040121 OR PRD<=20040121 OR AD<=20040121)
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